April 28, 2016

Ms. Katharine Kaplan
Manager, ENERGY STAR Product Development
& Program Administration
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

**Re: ENERGY STAR Version 5.0 Set-Top Box Specification and Test Method – Final Draft**

Dear Ms. Kaplan:

ARRIS Group, Inc. ("ARRIS") welcomes the opportunity to comment on the Final Draft of the ENERGY STAR Version 5.0 Set-Top Box ("STB") Specification and provides below suggestions related to the Specification.

1) Thin-Client/Remote Base Type TEC Allowance

ARRIS is disappointed to see that the EPA has rejected its request to delay implementation of the reduction of the thin-client/remote base type TEC allowance. While ARRIS agrees that clients should enter a very low power mode when not in active use, an implementation deadline of January 1, 2018 does not provide enough time for the hardware and software to be re-engineered to implement the TEC allowance. The data set provided by the EPA shows that thin-clients could comply with the proposed limits if MSOs implemented a 1W standby. However, the majority of the models used for the analysis from various manufacturers are not capable of being upgraded to support this 1W standby and would have to be made prematurely obsolete and replaced with significantly redesigned products to continue compliance.

2) Special Function Configuration in Testing

The DOE's addition of a requirement that STBs should be tested at the least efficient state available from setup prompts does not align with consumer behavior. Evidence shows that where users are given options during setup, three quarters of users choose either the default or first option. ARRIS proposes that products that present consumers with options at setup be tested at either the default or first option. This will more closely align with "real world" consumer behavior, and will encourage manufacturers to set the default to the most efficient state.

3) High-Power MIMO allowance

Removal of the high-power MIMO allowance from the Specification at this late stage is a concern. Products are designed to comply with the FCC's rules, which require the transmit power to be variable only if operating in the 5 GHz DFS band (U-NII band 2) and then only

require power to be reduced to 24dBm, which is still above the threshold previously set between low and high power for MIMO devices.[1] Transmissions in other 5 GHz bands do not require transmit power control. The U.S. Voluntary Agreement for Small Network Equipment[2] recognizes that devices with greater coverage use more energy, as does the aspirational EU Broadband Code of Conduct.[3] The Energy Star scheme should similarly recognize this and reinstate the high-power MIMO allowance.

4) Scheduled Sleep Duration in Test Method

Line 122 of the Test Method erroneously refers to the scheduled sleep duration "as specified in section 5.3C." The Test Method should be revised to state that the scheduled sleep duration is specified in section 5.3B.

5) Products Required to Support Deep Sleep

The EPA's February 23rd Webinar suggested that EPA intends to broaden the range of STBs required to support Deep Sleep in Version 6 of the Specification. In order to plan effectively, ARRIS requests additional clarity regarding the products that EPA intends to require to support Deep Sleep in Version 6 and the anticipated date this requirement will take effect.

6) Wi-Fi Mesh capability

ARRIS is aware that a number of MSOs are intending to deploy Wi-Fi Mesh solutions within the lifetime of Energy Star Version 5. This is a new technology that significantly increases and improves Wi-Fi coverage for consumers, but does have an impact on the energy consumption of devices. Given the current lack of actual consumption data for Mesh implementations, and not wishing to delay the proposed timescale for the adoption of Version 5, ARRIS requests that the EPA hold an interim review of Version 5 during late 2016 or early 2017 with the aim to incorporate an allowance for Wi-Fi Mesh functionality starting in 2018.

* * * *

[1] 47 C.F.R. § 15.407; *Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure Devices in the 5 GHZ Band*, Memorandum Opinion & Order, 21 FCC Rcd. 7672 (2006).

[2] Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment, Annex 2, Table 2, http://www.cta.tech/CorporateSite/media/environment/energy/Voluntary-Agreement-for-Ongoing-Improvement-to-the-Energy-Efficiency-of-Small-Network-Equipment.pdf.

[3] European Commission Joint Research Centre, Code of Conduct on Energy Consumption of Broadband Equipment Version 5.0, Table 11, http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/files/documents/ICT_CoC/cocv5-broadband_final.pdf.

ARRIS appreciates this opportunity to comment and looks forward to further discussions with EPA about the Final Draft Specification. Please contact me if you have any questions regarding this matter.

Sincerely,

*/s/ Jason E. Friedrich*

Jason E. Friedrich
Vice President, Government
& Regulatory Affairs
ARRIS Group, Inc.
101 Tournament Drive
Horsham, PA 19044